

Translation

PATENT COOPERATION TREATY

PCT/EP2003/006199



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

| | | |
|---|---|---|
| Applicant's or agent's file reference 345 P 333 PCT | FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) | |
| International application No. PCT/EP2003/006199 | International filing date (day/month/year) 12 June 2003 (12.06.2003) | Priority date (day/month/year) 15 July 2002 (15.07.2002) |
| International Patent Classification (IPC) or national classification and IPC H01Q 1/24, 5/00, 9/04 | | |
| Applicant KATHREIN-WERKE KG | | |

| |
|--|
| 1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36. |
| 2. This REPORT consists of a total of <u>6</u> sheets, including this cover sheet. <input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of <u>2</u> sheets. |
| 3. This report contains indications relating to the following items: I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application |

| | |
|---|---|
| Date of submission of the demand 04 December 2003 (04.12.2003) | Date of completion of this report 08 October 2004 (08.10.2004) |
| Name and mailing address of the IPEA/EP | Authorized officer |
| Facsimile No. | Telephone No. |

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

national application No.

PCT/EP2003/006199

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
 pages 1-13, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☒ the claims:
 pages 3-15, as originally filed
 pages _____, as amended (together with any statement under Article 19
 pages _____, filed with the demand
 pages 1, 2, filed with the letter of 05 April 2004 (05.04.2004)
- ☒ the drawings:
 pages 1-13, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP 03/06199

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|-------------------------------|--------|------|-----|
| Novelty (N) | Claims | 1-15 | YES |
| | Claims | | NO |
| Inventive step (IS) | Claims | 1-15 | YES |
| | Claims | | NO |
| Industrial applicability (IA) | Claims | 1-15 | YES |
| | Claims | | NO |

2. Citations and explanations

1. Documents

This examination report makes reference to the following documents, cited in the search report:

- D1: DE 195 12 003 A (FRANCE TELECOM)
5 October 1995 (1995-10-05)
- D2: US-A-5 977 916 (HAUB DAVID RYAN ET AL)
2 November 1999 (1999-11-02)
- D3: RICHARD C. JOHNSON: "Antenna Engineering Handbook", 1993, MCGRAW-HILL, NEW YORK, USA, XP002256266
- D7: EP-A-0 537 548 (BALL CORP)
21 April 1993 (1993-04-21).

2. Lack of clarity (PCT Article 6)

Independent claim 1 contains two alternative embodiments (see page 15, lines 19-24: "feature j")), namely:

Alternative 1:

The flat-top antenna for transmitting in a higher frequency band is in the same plane as the flat-top

antenna for transmitting in a lower frequency band (page 15, lines 21-22).

Alternative 2:

The flat-top antenna for transmitting in a higher frequency band is transversely offset, relative to the flat-top antenna for transmitting in a lower frequency band, in a plane running parallel or at least approximately parallel to that of the flat-top antenna for transmitting in a lower frequency band (page 15, lines 22-24).

Feature d) of independent claim 1 (page 14, lines 17-21) is inconsistent with alternative 1 in feature j); the additional feature of dependent claim 2 is likewise inconsistent therewith (PCT Article 6).

In the following remarks, it has been assumed that the size of the flat-top antenna decreases as a function of the frequency band used (see description, page 7, lines 23-33; figures 11 and 12).

3. Novelty (PCT Article 33(2)), inventive step (PCT Article 33(3)) and industrial applicability (PCT Article 33(4))

Independent claim 1 of the present application concerns a dual-band or multi-band antenna, including the mains supply, which can be produced from a single sheet by stamping and bending, and needs only to be on an earth plane.

Document D1 discloses a single-band antenna; its emitting surfaces and shorting circuit are manufactured from a single sheet by stamping and bending, but the mains supply is not an integral part of the antenna (figure 2).

Document D2 discloses a dual-band antenna; although its emitting surfaces and short-circuit are manufactured from a single sheet by stamping and bending, but the mains supply is similarly not an integral part of the antenna (figure 6).

Document D3 discloses flat-top antennas arranged in different planes for operating in different frequency bands. However, because of the nature of the elementary antennas, the arrangement shown (figures 7-26) is not suitable for manufacture from a single sheet by stamping and bending.

Amongst the international search report citations, D7 (figures 4 and 5) is the only publication that discloses an antenna having a mains supply which can be manufactured by a stamping and bending process. However, the design of this antenna is not suitable for the manufacture of a dual-band or multi-band antenna.

None of the antennas disclosed in the searched documents are of a shape that readily lends itself to the manufacture of a **one-piece** dual-band or multi-band antenna. Furthermore, even if documents D2 and D7 are read in combination, they do not render an arrangement as per **claim 1** obvious, since

/...

the flat-top antenna described in document D7 is not suitable for operation in multiple frequency bands.

The subject matter of independent claim 1 of the present application is therefore novel and inventive (PCT Article 33(2) and (3)). Since all the remaining claims (claims 2-15) are dependent on claim 1, the subject matter of said claims likewise is novel and inventive (PCT Article 33(2) and (3)).

Furthermore, the subject matter of all the claims is industrially applicable (PCT Article 33(4)).

4. Further observations

4.1 Claim 14 fails to meet the requirements of PCT Article 6 because, if the optional features are disregarded, said claim specifies only that the flat-top antenna wing-elements comprise flat-top antenna wing-element sections. In consequence, the definition lacks clarity.

4.2 The application fails to meet the requirements of PCT Rule 10.2 (consistency of terminology): in claims 1 and 14, the expression "the flat-top antenna wing-element" is used in the same context as the expression "the antenna wing-element" in claims 5-8, 12 and 13.

4.3 The application fails to meet the requirements of PCT Article 6 (conciseness): the additional features of dependent claims 12 and 13 are already disclosed in claim 1. In consequence, claims 12 and 13 are superfluous.

4.4 Claim 1 fails to meet the requirements of PCT Rule 6.3(b) (two-part form):

feature j) of independent claim 1 belongs to the prior art (see document D2, figure 6; document D3, figures 7-24 and 7-26) and should therefore be included in the preamble (PCT Rule 6.3(b)(i)).

4.5 The application fails to meet the requirements of PCT Rule 5.1(a)(ii) since the relevant prior art (documents D1 to D3 and document D7) are not cited in the description.